

Use Attainability Analysis

for

WBID 0899 Salt Fork

Submitted by
SES, Inc.

to

Missouri Department of Natural Resources
Water Protection Program

Date received: November 14, 2007

Field Data Sheets for Recreation Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad): Salt Fk.			
Missouri Water Body Identification (WBID) Number:		899	
8 digit HUC code:	1030014	County:	Lafayette
Upstream Legal Description (from Table H):	T50N	R24W	Sec29
Downstream Legal Description (from Table H):	T51N	R22W	Sec27
Number of sites evaluated:	11		
List all site numbers, listed consequently upstream to downstream: 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1			

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled.
Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

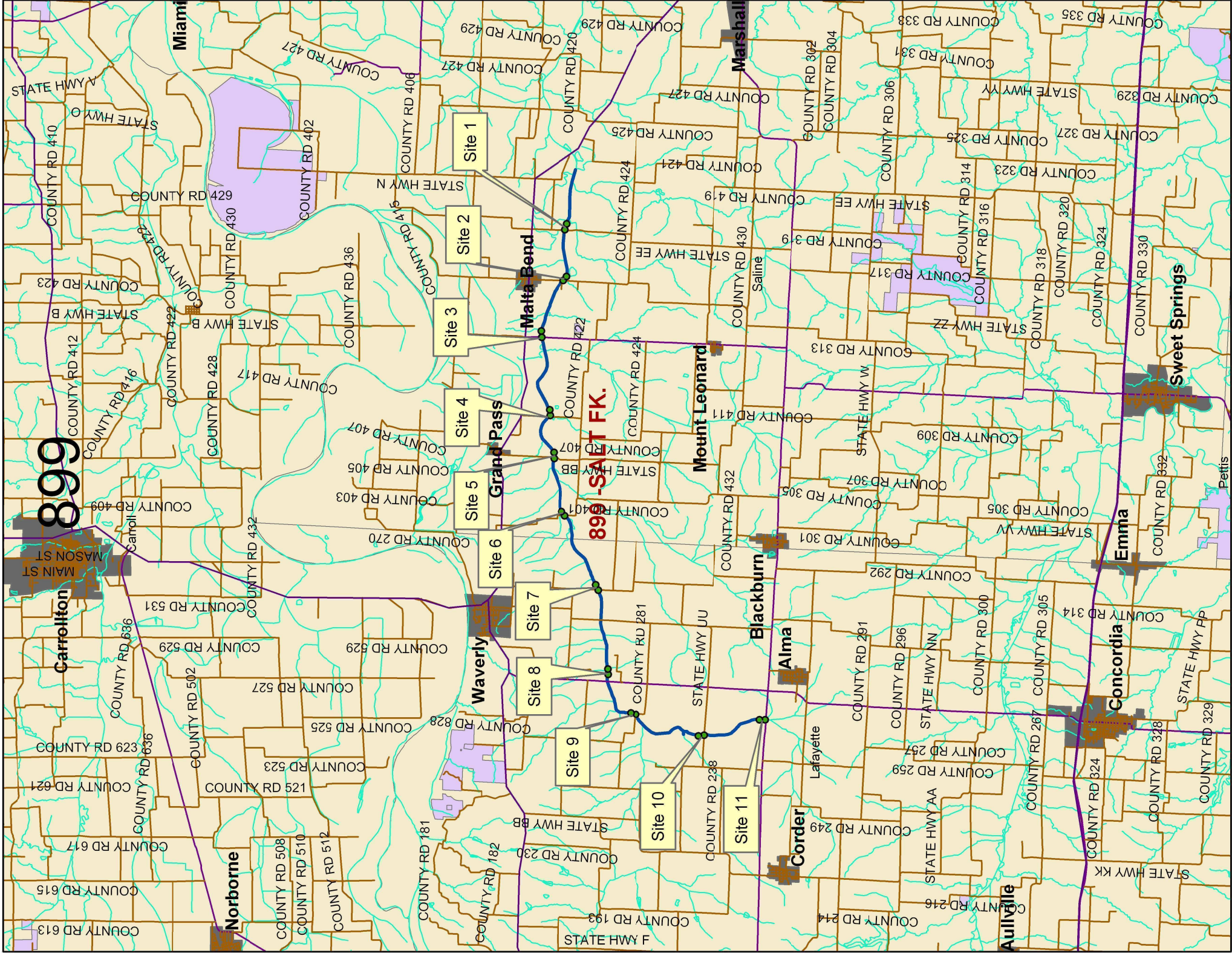
Facility Name(s) and Permit Number(s): Alma Sewage Treatment Lagoon MO0048097

III. UAA Surveyor (please print legibly)

Name of Surveyor: Gilisa Gould	Telephone Number: 913.307.0054
Organization/Employer: SES, Inc.	

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: gilisa gould **Date:** 11.01.07



WBID # 899
 Site # 1

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.23.07 16:10	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould	417 Rd.
Current Weather Conditions: clear	Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches	Permit Number: MO0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0470663	4336844	7.6
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0470907	4336767	8.2

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
22	downstream, T1	23	upstream, T1	24	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
25	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
 Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 20	% Sand	% Silt 40	% Mud/Clay 40	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.23.07

Organization: SES, Inc Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>1</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0470663</u> UTM Y: <u>4336844</u> +/- <u>7.6</u> (meters) 11 UTM X: <u>0470907</u> UTM Y: <u>4336767</u> +/- <u>8.2</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>																Dissolved Oxygen						
																Date: <u>10.23.07</u> Time: <u>16:10</u> Dissolved Oxygen: <u>3.0</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>14.8</u> (°C)						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.7	0.60	0.7	0.05	0.8	0.30	0.8	0.05	0.9	0.15	0.9	0.15	0.8	0.10	0.6	0.25	1.0	0.55	0.7	0.05	0.9	0.15
2	1.4	0.70	1.4	0.20	1.6	0.70	1.6	0.45	1.8	0.85	1.8	0.65	1.6	0.40	1.2	0.85	2.0	1.00	1.4	0.30	1.8	0.30
3	2.1	1.00	2.1	0.50	2.4	0.65	2.4	1.00	2.7	1.00	2.7	1.00	2.4	0.90	1.8	1.00	3.0	1.00	2.1	0.50	2.7	0.50
4	2.8	1.00	2.8	0.65	3.2	0.15	3.2	1.00	3.6	1.00	3.6	1.00	3.2	1.00	2.4	1.00	4.0	1.00	2.8	0.60	3.6	0.70
5	3.5	0.85	3.5	0.65	4.0	0.40	4.0	1.00	4.5	1.00	4.5	1.00	4.0	1.00	3.0	1.00	5.0	1.00	3.5	0.65	4.5	0.60
6	4.2	0.60	4.2	0.50	4.8	0.60	4.8	1.00	5.4	1.00	5.4	1.00	4.8	0.85	3.6	1.00	6.0	1.00	4.2	0.40	5.4	0.40
7	4.9	0.50	4.9	0.40	5.6	0.75	5.6	1.00	6.3	1.00	6.3	1.00	5.6	0.60	4.2	1.00	7.0	1.00	4.9	0.10	6.3	0.50
8	5.6	0.50	5.6	0.20	6.4	0.55	6.4	0.60	7.2	0.90	7.2	0.60	6.4	0.30	4.8	0.70	8.0	1.00	5.6	0.15	7.2	0.35
9	6.3	0.20	6.3	0.05	7.2	0.25	7.2	0.45	8.1	0.20	8.1	0.25	7.2	0.15	5.4	0.65	9.0	0.60	6.3	0.05	8.1	0.05
Right Bank	7.0	0.00	7.0	0.00	8.0	0.00	8.0	0.00	9.0	0.00	9.0	0.00	8.0	0.00	6.0	0.00	10.0	0.00	7.0	0.00	9.0	0.00
Feature Type	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.01.07

WBID # 899
 Site # 2

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.23.07 17:00	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould	CR 415
Current Weather Conditions: clear	Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches	Permit Number: MO0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0468620	4336907		3.0	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0468787	4336772		5.5	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
26	downstream, T1	27	upstream, T1	28	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
29	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 20	% Sand	% Silt 40	% Mud/Clay 40	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.23.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>2</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0468620</u> UTM Y: <u>4336907</u> +/- <u>3.0</u> (meters) 11 UTM X: <u>0468787</u> UTM Y: <u>4336772</u> +/- <u>5.5</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.23.07</u> Time: <u>17:00</u> Dissolved Oxygen: <u>3.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.5</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.6	0.10	0.7	0.10	0.8	0.10	0.8	0.10	0.7	0.20	0.8	0.05	0.8	0.05	0.8	0.05	0.7	0.05	0.7	0.10	0.7	0.10
2	1.2	0.40	1.4	0.35	1.6	0.40	1.6	0.30	1.4	0.65	1.6	0.30	1.6	0.35	1.6	0.20	1.4	0.20	1.4	0.30	1.4	0.40
3	1.8	0.40	2.1	0.50	2.4	0.40	2.4	0.60	2.1	0.85	2.4	0.60	2.4	0.70	2.4	0.45	2.1	0.25	2.1	0.70	2.1	0.60
4	2.4	0.45	2.8	0.60	3.2	0.90	3.2	0.80	2.8	0.90	3.2	0.75	3.2	0.90	3.2	0.95	2.8	0.70	2.8	0.95	2.8	0.85
5	3.0	0.50	3.5	0.55	4.0	1.00	4.0	0.80	3.5	0.80	4.0	0.70	4.0	1.00	4.0	1.00	3.5	0.80	3.5	0.80	3.5	1.00
6	3.6	0.30	4.2	0.45	4.8	1.00	4.8	0.90	4.2	0.45	4.8	0.65	4.8	1.00	4.8	1.00	4.2	0.55	4.2	0.75	4.2	0.95
7	4.2	0.15	4.9	0.45	5.6	0.90	5.6	0.90	4.9	0.30	5.6	0.50	5.6	0.80	5.6	1.00	4.9	0.50	4.9	0.70	4.9	0.50
8	4.8	0.05	5.6	0.30	6.4	0.50	6.4	0.60	5.6	0.20	6.4	0.30	6.4	0.30	6.4	0.40	5.6	0.20	5.6	0.60	5.6	0.30
9	5.4	0.01	6.3	0.05	7.2	0.25	7.2	0.10	6.3	0.05	7.2	0.10	7.2	0.05	7.2	0.10	6.3	0.05	6.3	0.30	6.3	0.05
Right Bank	6.0	0.00	7.0	0.00	8.0	0.00	8.0	0.00	7.0	0.00	8.0	0.00	8.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.01.07

WBID # 899
 Site # 3

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.23.07 17:40	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould	Hwy 127
Current Weather Conditions: clear	Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches	Permit Number: MO 0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0466324	4337790		14.3	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0466580	4337785		7.9	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
30	upstream, T1	31	downstream, T1	32	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
33	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 10	% Sand	% Silt 50	% Mud/Clay 40	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.23.07

Organization: SES, Inc Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>3</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0466324</u> UTM Y: <u>4337790</u> +/- <u>14.3</u> (meters) 11 UTM X: <u>0466580</u> UTM Y: <u>4337785</u> +/- <u>7.9</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.23.07</u> Time: <u>17:40</u> Dissolved Oxygen: <u>3.5</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>12.4</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.7	0.30	0.8	0.10	0.8	0.15	0.6	0.20	0.5	0.05	0.8	0.10	0.7	0.05	0.8	0.05	0.5	0.05	0.6	0.01	0.8	0.10
2	1.4	0.40	1.6	0.35	1.6	0.35	1.2	0.60	1.0	0.15	1.6	0.80	1.4	0.05	1.6	0.40	1.0	0.40	1.2	0.01	1.6	0.45
3	2.1	0.95	2.4	0.70	2.4	0.55	1.8	0.95	1.5	0.30	2.4	1.00	2.1	0.00	2.4	0.70	1.5	0.70	1.8	0.20	2.4	0.75
4	2.8	1.00	3.2	0.65	3.2	0.90	2.4	1.00	2.0	0.55	3.2	1.00	2.8	0.10	3.2	0.75	2.0	0.60	2.4	0.35	3.2	1.00
5	3.5	1.00	4.0	0.55	4.0	1.00	3.0	1.00	2.5	0.55	4.0	1.00	3.5	0.40	4.0	0.65	2.5	0.60	3.0	0.50	4.0	1.00
6	4.2	1.00	4.8	0.40	4.8	1.00	3.6	1.00	3.0	0.45	4.8	1.00	4.2	0.00	4.8	0.30	3.0	0.35	3.6	0.55	4.8	0.85
7	4.9	1.00	5.6	0.35	5.6	1.00	4.2	1.00	3.5	0.35	5.6	0.90	4.9	0.10	5.6	0.20	3.5	0.30	4.2	0.60	5.6	0.70
8	5.6	0.95	6.4	0.15	6.4	0.80	4.8	0.40	4.0	0.20	6.4	0.60	5.6	0.10	6.4	0.10	4.0	0.20	4.8	0.50	6.4	0.45
9	6.3	0.45	7.2	0.10	7.2	0.70	5.4	0.05	4.5	0.05	7.2	0.05	6.3	0.05	7.2	0.05	4.5	0.05	5.4	0.30	7.2	0.10
Right Bank	7.0	0.00	8.0	0.00	8.0	0.00	6.0	0.00	5.0	0.00	8.0	0.00	7.0	0.00	8.0	0.00	5.0	0.00	6.0	0.00	8.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		riffle		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.01.07

WBID # 899
 Site # 4

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.24.07	9:45	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould	upstream from Hwy 127	
Current Weather Conditions: clear	Facility Name:	Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches	Permit Number:	MO 0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0463173	4337449		11.6	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0463402	4337464		3.4	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
34	downstream, T1	35	upstream, T1	36	pipe on bank of creek
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
37	downstream, T11	38	upstream, T11		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
	30	10	30	30	

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.24.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>4</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0463173</u> UTM Y: <u>4337449</u> +/- <u>11.6</u> (meters) 11 UTM X: <u>0463402</u> UTM Y: <u>4337464</u> +/- <u>3.4</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.24.07</u> Time: <u>9:45</u> Dissolved Oxygen: <u>9.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>14.1</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.7	0.20	0.6	0.15	0.7	0.15	0.7	0.20	0.8	0.15	0.7	0.20	0.7	0.01	0.6	0.20	0.6	0.20	0.5	0.01	0.4	0.05
2	1.4	0.25	1.2	0.25	1.4	0.70	1.4	0.55	1.6	0.35	1.4	0.50	1.4	0.15	1.2	0.60	1.2	0.75	1.0	0.05	0.8	0.15
3	2.1	0.40	1.8	0.25	2.1	0.80	2.1	0.65	2.4	0.50	2.1	0.45	2.1	0.30	1.8	0.60	1.8	0.75	1.5	0.15	1.2	0.25
4	2.8	0.50	2.4	0.35	2.8	0.95	2.8	0.65	3.2	0.45	2.8	0.45	2.8	0.35	2.4	0.75	2.4	0.80	2.0	0.05	1.6	0.20
5	3.5	0.60	3.0	0.30	3.5	1.00	3.5	0.60	4.0	0.35	3.5	0.45	3.5	0.25	3.0	0.80	3.0	0.70	2.5	0.05	2.0	0.20
6	4.2	0.55	3.6	0.25	4.2	1.00	4.2	0.50	4.8	0.25	4.2	0.40	4.2	0.30	3.6	0.50	3.6	0.60	3.0	0.10	2.4	0.20
7	4.9	0.40	4.2	0.30	4.9	1.00	4.9	0.40	5.6	0.25	4.9	0.35	4.9	0.40	4.2	0.25	4.2	0.50	3.5	0.65	2.8	0.15
8	5.6	0.35	4.8	0.20	5.6	0.95	5.6	0.30	6.4	0.25	5.6	0.05	5.6	0.30	4.8	0.25	4.8	0.30	4.0	0.15	3.2	0.05
9	6.3	0.10	5.4	0.05	6.3	0.40	6.3	0.20	7.2	0.20	6.3	0.05	6.3	0.10	5.4	0.15	5.4	0.15	4.5	0.05	3.6	0.01
Right Bank	7.0	0.00	6.0	0.00	7.0	0.00	7.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00	6.0	0.00	5.0	0.00	4.0	0.00
Feature Type	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.01.07

WBID # 899
 Site # 5

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.24.07	10:40	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould		CR 415
Current Weather Conditions: clear		Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches		Permit Number: MO0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0461439	4337285		6.7	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0461683	4337299		1.8	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
39	downstream, T1	40	upstream, T1	41	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
42	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
Site # 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
10	20	10	30	30	

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.24.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>5</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0461439</u> UTM Y: <u>4337285</u> +/- <u>6.7</u> (meters) 11 UTM X: <u>0461683</u> UTM Y: <u>4337299</u> +/- <u>1.8</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.24.07</u> Time: <u>10:40</u> Dissolved Oxygen: <u>9.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>11.4</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.7	0.05	0.6	0.01	0.7	0.05	0.7	0.10	0.7	0.10	0.6	0.01	0.5	0.01	0.5	0.05	0.6	0.01	0.6	0.01	0.3	0.01
2	1.4	0.01	1.2	0.05	1.4	0.20	1.4	0.30	1.4	0.25	1.2	0.05	1.0	0.05	1.0	0.05	1.2	0.01	1.2	0.01	0.6	0.05
3	2.1	0.01	1.8	0.10	2.1	0.30	2.1	0.25	2.1	0.25	1.8	0.00	1.5	0.10	1.5	0.05	1.8	0.05	1.8	0.05	0.9	0.10
4	2.8	0.00	2.4	0.10	2.8	0.40	2.8	0.20	2.8	0.20	2.4	0.00	2.0	0.05	2.0	0.05	2.4	0.05	2.4	0.05	1.2	0.15
5	3.5	0.01	3.0	0.10	3.5	0.50	3.5	0.20	3.5	0.15	3.0	0.01	2.5	0.20	2.5	0.05	3.0	0.05	3.0	0.10	1.5	0.15
6	4.2	0.10	3.6	0.05	4.2	0.50	4.2	0.25	4.2	0.15	3.6	0.05	3.0	0.30	3.0	0.10	3.6	0.05	3.6	0.10	1.8	0.20
7	4.9	0.10	4.2	0.10	4.9	0.55	4.9	0.30	4.9	0.20	4.2	0.05	3.5	0.10	3.5	0.15	4.2	0.10	4.2	0.10	2.1	0.20
8	5.6	0.05	4.8	0.05	5.6	0.45	5.6	0.40	5.6	0.30	4.8	0.10	4.0	0.10	4.0	0.20	4.8	0.15	4.8	0.15	2.4	0.05
9	6.3	0.05	5.4	0.10	6.3	0.20	6.3	0.20	6.3	0.20	5.4	0.10	4.5	0.05	4.5	0.15	5.4	0.15	5.4	0.15	2.7	0.05
Right Bank	7.0	0.00	6.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00	5.0	0.00	5.0	0.00	6.0	0.00	6.0	0.00	3.0	0.00
Feature Type (riffle, run, or pool)	riffle		riffle		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.01.07

WBID # 899
 Site # 6

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.24.07 11:15	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould	CR 401
Current Weather Conditions: clear	Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches	Permit Number: MO0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, in Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0459129	4336852		5.2	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0459299	4336983		4.3	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
43	downstream, T1	44	upstream, T1	45	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
46	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
	20	20	20	40	

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.24.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>6</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0459129</u> UTM Y: <u>4336852</u> +/- <u>5.2</u> (meters) 11 UTM X: <u>0459299</u> UTM Y: <u>4336983</u> +/- <u>4.3</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>																Dissolved Oxygen						
Date: <u>10.24.07</u> Time: <u>11:15</u> Dissolved Oxygen: <u>8.0</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>20.8</u> (°C)																						
Transect Cross-Section																						
Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.7	0.05	0.5	0.10	0.6	0.05	0.7	0.05	0.5	0.05	0.6	0.10	0.5	0.05	0.5	0.10	0.7	0.05	0.6	0.05	0.5	0.10
2	1.4	0.05	1.0	0.25	1.2	0.25	1.4	0.15	1.0	0.15	1.2	0.30	1.0	0.01	1.0	0.20	1.4	0.15	1.2	0.05	1.0	0.25
3	2.1	0.10	1.5	0.30	1.8	0.30	2.1	0.05	1.5	0.20	1.8	0.25	1.5	0.00	1.5	0.25	2.1	0.25	1.8	0.10	1.5	0.35
4	2.8	0.10	2.0	0.15	2.4	0.25	2.8	0.05	2.0	0.25	2.4	0.25	2.0	0.10	2.0	0.25	2.8	0.15	2.4	0.10	2.0	0.30
5	3.5	0.15	2.5	0.20	3.0	0.25	3.5	0.05	2.5	0.20	3.0	0.30	2.5	0.20	2.5	0.20	3.5	0.25	3.0	0.10	2.5	0.25
6	4.2	0.15	3.0	0.20	3.6	0.25	4.2	0.05	3.0	0.15	3.6	0.25	3.0	0.25	3.0	0.20	4.2	0.25	3.6	0.05	3.0	0.25
7	4.9	0.10	3.5	0.20	4.2	0.20	4.9	0.05	3.5	0.15	4.2	0.15	3.5	0.20	3.5	0.20	4.9	0.25	4.2	0.01	3.5	0.20
8	5.6	0.10	4.0	0.20	4.8	0.20	5.6	0.01	4.0	0.10	4.8	0.05	4.0	0.10	4.0	0.15	5.6	0.25	4.8	0.01	4.0	0.15
9	6.3	0.05	4.5	0.20	5.4	0.10	6.3	0.01	4.5	0.05	5.4	0.05	4.5	0.05	4.5	0.10	6.3	0.10	5.4	0.01	4.5	0.05
Right Bank	7.0	0.00	5.0	0.00	6.0	0.00	7.0	0.00	5.0	0.00	6.0	0.00	5.0	0.00	5.0	0.00	7.0	0.00	6.0	0.00	5.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		riffle		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.01.05

WBID # 899
 Site # 7

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.24.07 12:55	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould	CR 276
Current Weather Conditions: clear	Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches	Permit Number: MO0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, in Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0456127	4335512		2.4	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0456345	4335595		4.6	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
47	downstream, T1	48	upstream, T1	49	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
50	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
Site # 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble 20	% Gravel 20	% Sand	% Silt 20	% Mud/Clay 40	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.24.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>7</u> Estimated Channel Incision: <u>4.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0456127</u> UTM Y: <u>4335512</u> +/- <u>2.4</u> (meters) 11 UTM X: <u>0456345</u> UTM Y: <u>4335595</u> +/- <u>4.6</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>																Dissolved Oxygen						
Date: <u>10.24.07</u> Time: <u>12:55</u> Dissolved Oxygen: <u>9.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>22.8</u> (°C)																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)		
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1	0.7	0.15	0.7	0.30	0.5	0.50	0.7	0.20	0.7	0.15	0.7	0.20	0.7	0.05	0.7	0.05	0.7	0.20	0.7	0.25	0.6	0.10
2	1.4	0.15	1.4	0.65	1.0	0.65	1.4	0.45	1.4	0.30	1.4	0.35	1.4	0.30	1.4	0.40	1.4	0.55	1.4	0.55	1.2	0.35
3	2.1	0.10	2.1	0.65	1.5	0.70	2.1	0.45	2.1	0.50	2.1	0.35	2.1	0.30	2.1	0.40	2.1	0.60	2.1	0.65	1.8	0.55
4	2.8	0.15	2.8	0.60	2.0	0.65	2.8	0.45	2.8	0.50	2.8	0.35	2.8	0.35	2.8	0.35	2.8	0.60	2.8	0.60	2.4	0.60
5	3.5	0.20	3.5	0.50	2.5	0.65	3.5	0.45	3.5	0.50	3.5	0.35	3.5	0.30	3.5	0.40	3.5	0.55	3.5	0.60	3.0	0.50
6	4.2	0.25	4.2	0.35	3.0	0.60	4.2	0.40	4.2	0.40	4.2	0.25	4.2	0.30	4.2	0.40	4.2	0.50	4.2	0.60	3.6	0.45
7	4.9	0.30	4.9	0.30	3.5	0.55	4.9	0.40	4.9	0.30	4.9	0.15	4.9	0.30	4.9	0.35	4.9	0.45	4.9	0.45	4.2	0.35
8	5.6	0.30	5.6	0.20	4.0	0.45	5.6	0.25	5.6	0.20	5.6	0.10	5.6	0.25	5.6	0.15	5.6	0.35	5.6	0.30	4.8	0.35
9	6.3	0.20	6.3	0.15	4.5	0.30	6.3	0.10	6.3	0.05	6.3	0.05	6.3	0.15	6.3	0.10	6.3	0.15	6.3	0.10	5.4	0.10
Right Bank	7.0	0.00	7.0	0.00	5.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00
Feature Type	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.01.07

WBID # 899
 Site # 8

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.24.07 13:40	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould	Hwy 23
Current Weather Conditions: clear	Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches	Permit Number: MO0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, in Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0452735	4335111		5.1	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0452951	4335117		3.9	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
51	downstream, T1	52	upstream, T1	53	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
54	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
Site # 8

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 40	% Sand 20	% Silt	% Mud/Clay 40	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 8

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.24.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>8</u> Estimated Channel Incision: <u>4.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0452735</u> UTM Y: <u>4335111</u> +/- <u>5.1</u> (meters) 11 UTM X: <u>0452451</u> UTM Y: <u>4335117</u> +/- <u>3.9</u> (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.24.07</u> Time: <u>13:40</u> Dissolved Oxygen: <u>10.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>17.8</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.3	0.05	0.4	0.05	0.4	0.05	0.5	0.05	0.4	0.10	0.5	0.05	0.3	0.05	0.5	0.05	0.3	0.10	0.3	0.05	0.2	0.15
2	0.6	0.10	0.8	0.15	0.8	0.15	1.0	0.20	0.8	0.15	1.0	0.15	0.6	0.05	1.0	0.10	0.6	0.20	0.6	0.10	0.4	0.30
3	0.9	0.15	1.2	0.15	1.2	0.20	1.5	0.20	1.2	0.15	1.5	0.20	0.9	0.05	1.5	0.05	0.9	0.20	0.9	0.25	0.6	0.30
4	1.2	0.15	1.6	0.15	1.6	0.20	2.0	0.20	1.6	0.20	2.0	0.20	1.2	0.10	2.0	0.05	1.2	0.20	1.2	0.25	0.8	0.25
5	1.5	0.15	2.0	0.15	2.0	0.20	2.5	0.20	2.0	0.20	2.5	0.20	1.5	0.10	2.5	0.01	1.5	0.20	1.5	0.25	1.0	0.25
6	1.8	0.15	2.4	0.15	2.4	0.20	3.0	0.15	2.4	0.20	3.0	0.20	1.8	0.05	3.0	0.01	1.8	0.20	1.8	0.20	1.2	0.15
7	2.1	0.10	2.8	0.10	2.8	0.15	3.5	0.20	2.8	0.10	3.5	0.20	2.1	0.05	3.5	0.00	2.1	0.15	2.1	0.15	1.4	0.10
8	2.4	0.05	3.2	0.05	3.2	0.15	4.0	0.15	3.2	0.05	4.0	0.15	2.4	0.05	4.0	0.05	2.4	0.10	2.4	0.10	1.6	0.10
9	2.7	0.05	3.6	0.05	3.6	0.05	4.5	0.10	3.6	0.05	4.5	0.05	2.7	0.01	4.5	0.01	2.7	0.10	2.7	0.10	1.8	0.05
Right Bank	3.0	0.00	4.0	0.00	4.0	0.00	5.0	0.00	4.0	0.00	5.0	0.00	3.0	0.00	5.0	0.00	3.0	0.00	3.0	0.00	2.0	0.00
Feature Type	pool		pool		pool		pool		pool		pool		pool		riffle		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.01.07

WBID # 899
 Site # 9

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.24.07	14:15	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould	Three Groves Rd	
Current Weather Conditions: clear	Facility Name:	Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches	Permit Number:	MO 0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, in Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0451113	4333970		4.8	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0451173	4334197		7.6	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
55	downstream, T1	56	upstream, T1	57	pipe in creek
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
58	downstream, T11	59	upstream, T11		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
 Site # 9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 60	% Sand	% Silt 20	% Mud/Clay 20	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.24.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>9</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0451113</u> UTM Y: <u>4333970</u> +/- <u>4.8</u> (meters) 11 UTM X: <u>0453373</u> UTM Y: <u>4334197</u> +/- <u>7.6</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.24.07</u> Time: <u>14:15</u> Dissolved Oxygen: <u>8.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>23.2</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.6	0.10	0.7	0.05	0.6	0.05	0.6	0.01	0.7	0.10	0.5	0.01	0.6	0.05	0.5	0.30	0.6	0.15	0.6	0.01	0.7	0.05
2	1.2	0.20	1.4	0.20	1.2	0.10	1.2	0.05	1.4	0.30	1.0	0.05	1.2	0.10	1.0	0.40	1.2	0.35	1.2	0.10	1.4	0.05
3	1.8	0.20	2.1	0.20	1.8	0.10	1.8	0.15	2.1	0.25	1.5	0.10	1.8	0.15	1.5	0.40	1.8	0.40	1.8	0.20	2.1	0.01
4	2.4	0.25	2.8	0.20	2.4	0.10	2.4	0.20	2.8	0.20	2.0	0.15	2.4	0.15	2.0	0.40	2.4	0.35	2.4	0.20	2.8	0.05
5	3.0	0.30	3.5	0.25	3.0	0.10	3.0	0.20	3.5	0.15	2.5	0.20	3.0	0.20	2.5	0.30	3.0	0.35	3.0	0.20	3.5	0.05
6	3.6	0.35	4.2	0.25	3.6	0.10	3.6	0.25	4.2	0.05	3.0	0.20	3.6	0.25	3.0	0.25	3.6	0.40	3.6	0.15	4.2	0.10
7	4.2	0.30	4.9	0.25	4.2	0.10	4.2	0.25	4.9	0.10	3.5	0.30	4.2	0.30	3.5	0.20	4.2	0.30	4.2	0.15	4.9	0.10
8	4.8	0.25	5.6	0.20	4.8	0.15	4.8	0.05	5.6	0.10	4.0	0.25	4.8	0.30	4.0	0.10	4.8	0.25	4.8	0.15	5.6	0.10
9	5.4	0.10	6.3	0.20	5.4	0.10	5.4	0.05	6.3	0.10	4.5	0.25	5.4	0.10	4.5	0.10	5.4	0.05	5.4	0.05	6.3	0.15
Right Bank	6.0	0.00	7.0	0.00	6.0	0.00	6.0	0.00	7.0	0.00	5.0	0.00	6.0	0.00	5.0	0.00	6.0	0.00	6.0	0.00	7.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.02.07

WBID # 899
 Site # 10

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.24.07	15:00	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould		Low Branch Rd.
Current Weather Conditions: clear		Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches		Permit Number: MO0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0450274	4331236		9.1	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0450246	4331466		9.4	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
63	downstream, T1	64	upstream, T1	65	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
66	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
 Site # 10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 20	% Sand 20	% Silt	% Mud/Clay 60	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.24.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>10</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0450274</u> UTM Y: <u>4331236</u> +/- <u>9.1</u> (meters) 11 UTM X: <u>0450246</u> UTM Y: <u>4331466</u> +/- <u>9.4</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>																Dissolved Oxygen						
																Date: <u>10.24.07</u> Time: <u>15:00</u> Dissolved Oxygen: <u>10.0</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>21.1</u> (°C)						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.6	0.01	0.5	0.01	0.5	0.05	0.6	0.05	0.6	0.05	0.6	0.05	0.7	0.05	0.6	0.05	0.7	0.05	0.7	0.01	0.6	0.05
2	1.2	0.01	1.0	0.10	1.0	0.10	1.2	0.10	1.2	0.10	1.2	0.15	1.4	0.05	1.2	0.05	1.4	0.05	1.4	0.10	1.2	0.05
3	1.8	0.01	1.5	0.15	1.5	0.10	1.8	0.10	1.8	0.10	1.8	0.10	2.1	0.10	1.8	0.10	2.1	0.10	2.1	0.10	1.8	0.10
4	2.4	0.05	2.0	0.15	2.0	0.10	2.4	0.30	2.4	0.10	2.4	0.20	2.8	0.15	2.4	0.10	2.8	0.20	2.8	0.10	2.4	0.10
5	3.0	0.01	2.5	0.20	2.5	0.15	3.0	0.25	3.0	0.10	3.0	0.15	3.5	0.15	3.0	0.20	3.5	0.20	3.5	0.10	3.0	0.10
6	3.6	0.01	3.0	0.15	3.0	0.15	3.6	0.30	3.6	0.15	3.6	0.10	4.2	0.15	3.6	0.20	4.2	0.15	4.2	0.15	3.6	0.10
7	4.2	0.00	3.5	0.10	3.5	0.15	4.2	0.20	4.2	0.10	4.2	0.05	4.9	0.10	4.2	0.15	4.9	0.15	4.9	0.20	4.2	0.05
8	4.8	0.01	4.0	0.05	4.0	0.05	4.8	0.20	4.8	0.10	4.8	0.05	5.6	0.10	4.8	0.15	5.6	0.05	5.6	0.25	4.8	0.05
9	5.4	0.01	4.5	0.01	4.5	0.05	5.4	0.05	5.4	0.05	5.4	0.01	6.3	0.05	5.4	0.10	6.3	0.05	6.3	0.15	5.4	0.01
Right Bank	6.0	0.00	5.0	0.00	5.0	0.00	6.0	0.00	6.0	0.00	6.0	0.00	7.0	0.00	6.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00
Feature Type (riffle, run, or pool)	riffle	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.02.07

WBID # 899
 Site # 11

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.24.07	15:40	Site Location Description (e.g. road crossing):
Personnel: Larissa Brown and Gilisa Gould		Hwy 20
Current Weather Conditions: clear		Facility Name: Alma Sewage Treatment Lagoon
Weather conditions for the past 10 days: 4.65 inches		Permit Number: MO 0048097
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0450900	4328768		11.2	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0450896	4328994		3.6	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
67	downstream, T1	68	upstream, T1	69	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
70	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 899
 Site # 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble 10	% Gravel 40	% Sand	% Silt 10	% Mud/Clay 40	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 899
Site # 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.24.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>899</u> Site #: <u>11</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0450900</u> UTM Y: <u>4328768</u> +/- <u>11.2</u> (meters) 11 UTM X: <u>0450896</u> UTM Y: <u>4338994</u> +/- <u>3.6</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown</u> and <u>Gilisa Gould</u>																Dissolved Oxygen						
Date: <u>10.24.07</u> Time: <u>15:45</u> Dissolved Oxygen: <u>10.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.1</u> (°C)																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.3	0.05	0.4	0.10	0.3	0.01	0.5	0.05	0.4	0.05	0.5	0.05	0.3	0.15	0.4	0.10	0.6	0.05	0.6	0.05	0.5	0.01
2	0.6	0.05	0.8	0.20	0.6	0.10	1.0	0.15	0.8	0.05	1.0	0.10	0.6	0.20	0.8	0.10	1.2	0.10	1.2	0.15	1.0	0.10
3	0.9	0.05	1.2	0.15	0.9	0.15	1.5	0.20	1.2	0.05	1.5	0.00	0.9	0.25	1.2	0.10	1.8	0.15	1.8	0.15	1.5	0.15
4	1.2	0.01	1.6	0.25	1.2	0.20	2.0	0.25	1.6	0.01	2.0	0.10	1.2	0.20	1.6	0.20	2.4	0.15	2.4	0.20	2.0	0.20
5	1.5	0.00	2.0	0.20	1.5	0.15	2.5	0.25	2.0	0.01	2.5	0.20	1.5	0.20	2.0	0.25	3.0	0.15	3.0	0.20	2.5	0.15
6	1.8	0.05	2.4	0.15	1.8	0.10	3.0	0.30	2.4	0.01	3.0	0.25	1.8	0.20	2.4	0.15	3.6	0.20	3.6	0.20	3.0	0.15
7	2.1	0.01	2.8	0.10	2.1	0.05	3.5	0.25	2.8	0.05	3.5	0.10	2.1	0.20	2.8	0.15	4.2	0.20	4.2	0.15	3.5	0.15
8	2.4	0.05	3.2	0.10	2.4	0.05	4.0	0.20	3.2	0.00	4.0	0.40	2.4	0.15	3.2	0.10	4.8	0.20	4.8	0.10	4.0	0.15
9	2.7	0.01	3.6	0.05	2.7	0.01	4.5	0.10	3.6	0.01	4.5	0.40	2.7	0.15	3.6	0.05	5.4	0.15	5.4	0.05	4.5	0.05
Right Bank	3.0	0.00	4.0	0.00	3.0	0.00	5.0	0.00	4.0	0.00	5.0	0.00	3.0	0.00	4.0	0.00	6.0	0.00	6.0	0.00	5.0	0.00
Feature Type (riffle, run, or pool)	riffle	pool		pool		pool		riffle		pool		pool		pool		pool		pool		pool		

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.02.07



"Gilisa Gould "
<ggould@ses-corp.com>
03/26/2008 05:03 PM

To ""Anne Peery"" <anne.peery@dnr.mo.gov>
cc
bcc
Subject RE: Questions on another UAA

Hello, had to stop studying and come in the office to do some "real" work ☺

So, WBID 899: yes, it was at base flow based on seeing the water level below vegetation on the banks. I do not know how I came up with the 4.65" for precipitation, because I just now went through the last 10 days and came up with .48" which is closer to your suggested .50".

The pipe at site#4 is mentioned under photos as #36 "water pipe south side of creek". If we can tell where it's coming from, we mention that, but most of these pipes are coming to the creek below ground and tracing is difficult. There is another pipe mentioned (#57) for this water body, but it's source is unknown as well.

Let me know if this answers everything.

Have a good day!

Gilisa Gould
SES, Inc., Merriam, KS
913.307.0046 Ext. 19
800.897.1163
ggould@ses-corp.com

From: Anne Peery [mailto:anne.peery@dnr.mo.gov]
Sent: Wednesday, March 26, 2008 3:47 PM
To: ggould@ses-corp.com
Subject: Questions on another UAA

Hello, Gilisa!
I hope your studies are going well.

Questions about Salt Fork, this time (WBID 899).
Since Data Sheet B states it rained 4.65 inches in the last 10 days, we are wondering if the creek was at baseflow. In checking weather at Whiteman AFB, the rainfall data was 0.5" 10/22/07, and none on the 21st and 20th.

Also, one of the pictures at site #4 shows a pipe discharging a copper colored liquid. It was not referred to in any notes. Does SES have any idea about the origin?

Thanks,

Anne Peery

Total Maximum Daily Load (TMDL) Developer
Missouri Department of Natural Resources
Water Protection Program
573-526-1426
anne.peery@dnr.mo.gov

WBID# 0899 Salt Fork



Site# 1 Photo ID# 22, Downstream, T1



Site# 1 Photo ID# 23, Upstream, T1



Site# 1 Photo ID# 24, Downstream, T 11



Site# 1 Photo ID# 25, Upstream T 11

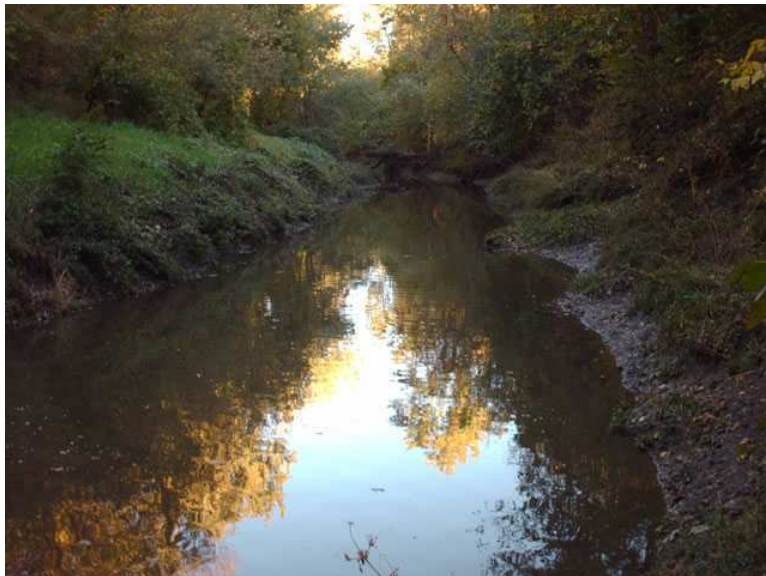
WBID# 0899 Salt Fork



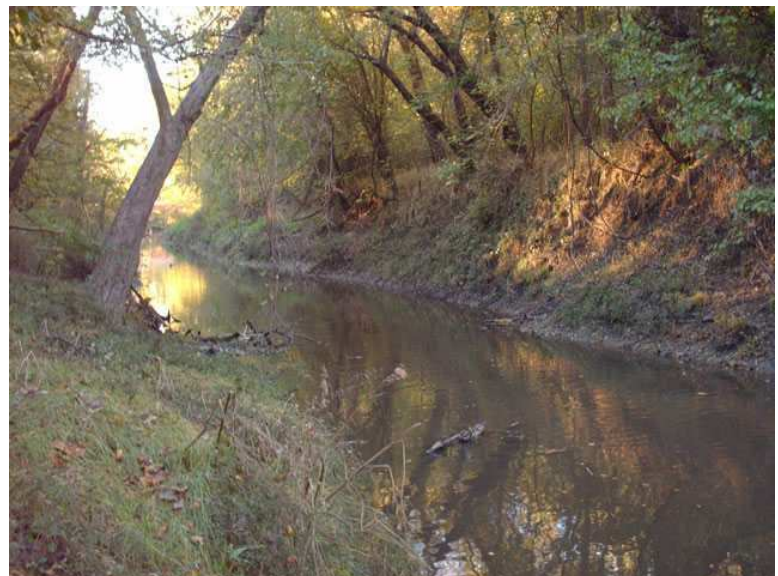
Site# 2 Photo ID# 26, Downstream, T1



Site# 2 Photo ID# 27, Upstream, T1



Site# 2 Photo ID# 28, Downstream, T 11



Site# 2 Photo ID# 29, Upstream T 11

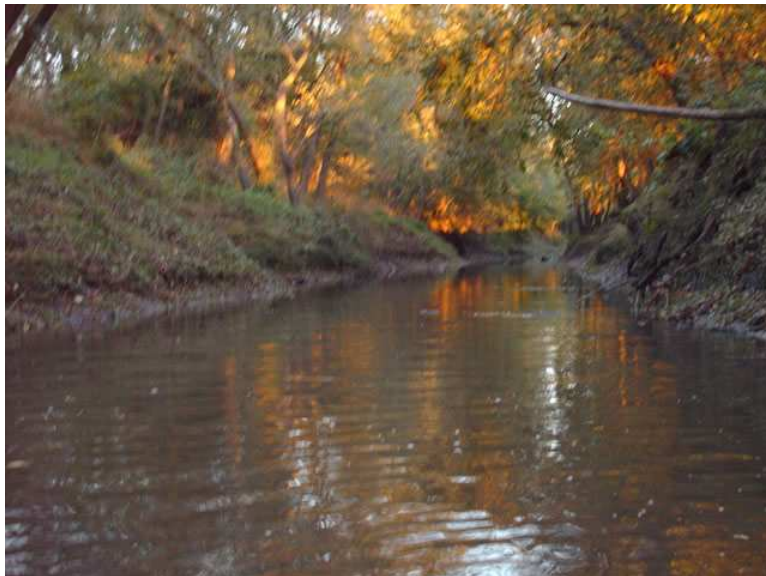
WBID# 0899 Salt Fork



Site# 3 Photo ID# 31, Downstream, T1



Site# 3 Photo ID# 30, Upstream, T1



Site# 3 Photo ID# 32, Downstream, T 11



Site# 3 Photo ID# 33, Upstream T 11

WBID# 0899 Salt Fork



Site# 4 Photo ID# 34, Downstream, T1



Site# 4 Photo ID# 35, Upstream, T1



Site# 4 Photo ID# 38, Upstream, T11



Site# 4 Photo ID# 37, Downstream, T 11

WBID# 0899 Salt Fork



Site# 4 Photo ID# 36, Pipe on bank of creek



Site# 5 Photo ID# 40, Upstream, T1



Site# 5 Photo ID# 39, Upstream, T1

WBID# 0899 Salt Fork



Site# 5 Photo ID# 41, Downstream, T11



Site# 5 Photo ID# 42, Upstream, T11



Site# 6 Photo ID# 43, Downstream, T 1



Site# 6 Photo ID# 44, Upstream T 1

WBID# 0899 Salt Fork



Site# 6 Photo ID# 45, Downstream, T 11



Site# 6 Photo ID# 46, Upstream, T 11



Site# 7 Photo ID# 47, Downstream, T 1



Site# 7 Photo ID# 48, Upstream T 1

WBID# 0899 Salt Fork



Site# 7 Photo ID# 49, Downstream, T 11



Site# 7 Photo ID# 50, Upstream, T 11



Site# 8 Photo ID# 51, Downstream, T 1



Site# 8 Photo ID# 52, Upstream T 1

WBID# 0899 Salt Fork



Site# 8 Photo ID# 53 Downstream, T 11



Site# 8 Photo ID# 54, Upstream, T 11

Site# 9 Photo ID# 55, Downstream, T 1 (no photo)



Site# 9 Photo ID# 56, Upstream T 1

WBID# 0899 Salt Fork



Site# 9 Photo ID# 58, Downstream, T11



Site# 9 Photo ID# 59, Upstream, T11



Site# 10 Photo ID# 63, Downstream, T 1



Site# 10 Photo ID# 64, Upstream T 1

WBID# 0899 Salt Fork



Site# 10 Photo ID# 65, Downstream, T11



Site# 10 Photo ID# 66, Upstream, T11



Site# 11 Photo ID# 67, Downstream, T 1



Site# 11 Photo ID# 68, Upstream T 1

WBID# 0899 Salt Fork



Site# 11 Photo ID# 69, Downstream, T11



Site# 11 Photo ID# 70, Upstream, T11